

UNIVERSITI TEKNOLOGI MARA

**COMBINING GEOMETRIC
BROWNIAN MOTION MODEL AND
MULTIPLE LINEAR REGRESSION
MODEL FOR PREDICTING KIJANG
EMAS SELLING PRICE**

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Thesis submitted in fulfillment
of the requirements for the degree of
Master of Science

Faculty of Computer and Mathematical Sciences

January 2016

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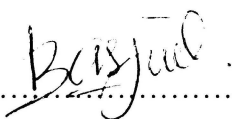
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ABSTRACT

Gold is widely known as the most valuable thing in this world which leads to the securing of gold as an investment portfolio among people. In making a profitable investment, it is extremely important to have an accurate decision on the buying and selling periods. Therefore, this paper attempts to analyze the appropriate forecast method for forecasting Malaysia's own gold bullion coin selling price namely Kijang Emas. The objectives of this research are to investigate the factors that affect the fluctuation of Kijang Emas gold prices, to develop forecasting model by using Multiple Linear Regression (MLR) method according to the factors that affect the Kijang Emas gold prices and to enhance the forecasting method by combining two individual methods, Geometric Brownian Motion (GBM) and MLR method. In order to improve the accuracy of the forecast, the combination of both forecast methods is proposed and it is done by using two combinations of forecasts methods; Simple Equal Weighted Average and Inverse Mean Square Forecast Error Combination method. Then, the forecast accuracy for each method is calculated by using Mean Absolute Percentage Error (MAPE) and the last result shows that the combination of forecast with Inverse Mean Square Forecast Error Combination method gives the lowest MAPE result. Hence, this method is highly recommended to be used in forecasting Kijang Emas selling price.

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